Energy, Mines and Resources Canada | Énergie, Mines et Ressources Canada

Financial and Fiscal Analysis Branch | Direction de l'analyse financière et fiscale

DO GOVERNMENTS TAKE TOO MUCH?

- AN EXAMINATION OF PRE AND POST NEP FISCAL REGIMES

Canada

Canada

Energy, Mines and Resources Canada / Énergie, Mines et Ressources Canada

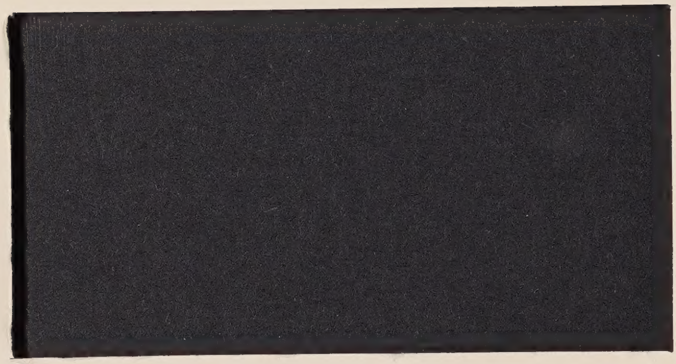
Financial and Fiscal Analysis Branch / Direction de l'analyse financière et fiscale

DO GOVERNMENTS TAKE TOO MUCH?

- AN EXAMINATION OF PRE AND POST NEP FISCAL REGIMES

Ottawa Canada
K1A 0E4

Canada



DO GOVERNMENTS TAKE TOO MUCH?

- AN EXAMINATION OF PRE AND POST NEP FISCAL REGIMES

Financial and Fiscal Analysis
Energy Policy Analysis
Energy, Mines and Resources
December 13, 1982

Energy, Mines and Resources Canada
Ottawa, Ontario
K1A 0E4

Énergie, Mines et Ressources Canada
Ottawa (Ontario)
K1A 0E4

Your file Votre référence

Our file Notre référence

EXECUTIVE SUMMARY OF "DO GOVERNMENTS TAKE TOO MUCH?"

BACKGROUND

The major fiscal objectives of the federal government in the development of the National Energy Program and in the subsequent negotiations with the producing provinces were to secure a larger federal share of revenues from oil and gas production, and to have in place a fiscal system which afforded the federal government a significant share of the upside revenue potential. In pursuing these objectives, the government emphasized that it was not its intention to improve its share at the expense of the industry. The principal issue was, rather, the disposition of revenues between the two levels of government.

The federal government believes that the system now in place has attained these objectives. Critics of the new regime, however, have argued that - contrary to the stated intentions of the federal government - the system has imposed a significantly greater net fiscal burden (i.e., taxes less incentives) on the industry.

At the same time, the industry's financial position has been adversely affected by rising interest expense caused both by the recent unprecedented levels of interest rates, and considerably increased recourse to debt finance.

This paper attempts to disentangle the relative contributions of the fiscal regime and the debt burden to the current financial difficulties of the industry. It is suggested in the paper that failure to isolate these impacts is at the root of misdirected criticism of the new fiscal regime. The paper concludes that the main source of industry cashflow difficulties is the debt burden. The fiscal burden is, in fact, currently no greater than under the previous regime, and will be moderately lower in the future.

Canada

The analysis provided in the paper is based on aggregated and disaggregated data for the upstream petroleum industry. The periods 1975-80 and 1981-86 are used as the basis for comparison of the pre- and post-NEP regimes. Price and other projections underlying the analysis are those outlined in the NEP Update. A summary of the analysis and the resulting conclusions, follows.

COMPARISON OF PRE- AND POST-NEP FISCAL REGIMES

The paper suggests that major structural differences complicate comparisons between the two systems. However, it is possible to assess both the aggregate situation and some typical cases. Therefore, comparisons of the level and shares of aggregate revenues (section 2) and netbacks for "typical" units of oil and natural gas production (section 3) are made for pre- and post-NEP periods.

1. Level and Sharing of Aggregate Petroleum Revenues

A comparison of the revenue shares clearly illustrates that the new regime will achieve the federal government's revenue sharing objectives.

Net revenues available for sharing are expected to more than double over the period 1981-86. Despite the substantial increase in revenues, the industry's share of the total revenue "pie" is expected to increase marginally over the period compared to its share during the 1975-80 period (i.e. 46 percent versus 45 percent). The federal government's share, on the other hand, is expected to double over the period 1981-86. This larger federal share results from a more equitable distribution of revenues between the two levels of government. It does not come at the expense of the industry. The paper, therefore, concludes that the new regime imposes a fiscal burden on the industry which is projected to be no higher during the 1981-86 period, than that borne by the industry historically.

The paper also emphasizes that the industry's projected share is very sensitive to future price changes. If international prices flatten out or decrease, for example, the industry's share will increase relative to the federal government's share. Conversely, the system provides the federal government with a larger portion of the incremental revenues resulting from increases in international prices (i.e. the upside potential).

2. Netback Analysis

As an alternative means of portraying the industry's relative position, the paper examines historical and projected oil and gas netbacks. These netbacks have been calculated using effective rates of income tax and average royalty rates.

The conclusions derived from these netback comparisons are very similar to those reached from the comparison of aggregate revenues. Netbacks are expected to increase significantly in nominal and real terms over the period 1982-86. In the case of oil netbacks, they are projected to be much higher than 1975-81 levels.

The paper emphasizes that netbacks, as normally calculated, do not reflect the receipt of Petroleum Incentive Payments (PIPs) or provincial incentives, even though PIPs have replaced tax incentives which are reflected in pre-NEP netback calculations. To compare more accurately the relative impacts of the old and new regimes, petroleum incentives should be reflected in the netback numbers. A detailed comparison of netbacks including incentives, for the years 1979 (pre-NEP) and 1982 (post-NEP) was made in the paper. It indicated that the relative fiscal burden for each category of oil and gas production has remained essentially constant.

THE INTEREST BURDEN

Interest charges have risen dramatically (i.e. more than double) in recent years resulting from growing debt loads mainly to finance new acquisitions, and from high interest rates. These interest costs have seriously eroded the industry's financial position.

To assess the relative contribution of the interest burden to current cashflow difficulties, after-tax cashflow before and after interest expense is examined in the report over the period 1977-81, for a sample of companies. The analysis clearly illustrates that industry pre-interest, after-tax returns per barrel have increased significantly from late 1970 levels although, in relative terms, Canadian firms have fared better. It is only when one examines the impact of rising debt charges on cashflow that the financial position of the industry begins to deteriorate seriously.

Net cashflow (after taxes and interest charges) decreased dramatically in 1981, particularly for the Canadian firms. The paper indicates that the per unit (of oil and gas production) interest burden for Canadian juniors, for example, increased by 214 percent from 1980 to 1981. Increases in the interest burden were also large for Canadian majors (82 percent) and foreign juniors (83 percent). The paper suggests that these increases, particularly for the Canadian segment of the industry, are directly attributable to takeovers and the associated burden of new debt.

CONCLUSIONS

The paper concludes that the Government of Canada has achieved its objective of a fairer share of oil and gas revenues, but that this redistribution has come about largely as a result of more equitable sharing between levels of government. The fiscal burden on the industry has remained relatively constant. These conclusions are not widely recognized because, for the industry as a whole and for the Canadian sector in particular, the interest burden has increased dramatically. Much of the criticism concerning the lack of cashflow available for re-investment has, therefore, been inappropriately directed at the NEP fiscal regime rather than at the impact of higher interest charges.

FOR FURTHER INFORMATION ON THE REPORT:

Wayne G. Wouters
or Neil McIlveen
(613) 995-9351

Financial and Fiscal Analysis
November 10, 1982

DO GOVERNMENTS TAKE TOO MUCH?

- AN EXAMINATION OF PRE AND POST NEP FISCAL REGIMES

Contents

DO GOVERNMENTS TAKE TOO MUCH?

- AN EXAMINATION OF PRE AND POST NEP FISCAL REGIMES

1. Introduction

One of the objectives of the federal government in the development of the National Energy Program, and in its negotiations with producing provinces, was to secure a larger share of the revenues from oil and gas production, and to have in place a system which afforded the federal government a significant share of the upside revenue potential. The federal government emphasized, however, that it was not its intention to improve its share solely, or even substantially, at the expense of the industry. The government believed, and still does, that there was some room for higher taxes on industry revenues, but made clear that the principal issue was the disposition of revenues between the two levels of government.

The government believes that the system now in place meets these objectives. There are new federal taxes on industry, in the form of the Petroleum and Gas Revenue Tax (PGRT) and Incremental Oil Revenue Tax. The new fiscal system includes, however, a system of incentives based upon investment. This incentive system replaces or supplements incentives hitherto provided under the Income Tax system. The combination of the new taxes and the new incentives constitutes the NEP fiscal system which has been agreed to by the producing provinces. In any determination of the impact of the NEP fiscal system, both the new tax burden and the new incentives must be considered, (i.e., the true measure of the new system is its net effect on the industry).

For purposes of this paper the term "fiscal burden" refers to this net effect. It is recognized that the new system is a major departure from the pre-NEP framework. Less "unconditional" cash is left with the industry; potentially greater "conditional" or investment-related cash is provided. Clearly, the new system will affect firms in different ways, both in terms of comparison with the former system and in terms of differences between companies. For example, a low-reinvesting company fares worse under the new system than before; a high reinvestor does better. A Canadian company, all other things being equal, does better than a foreign-controlled firm. Some companies will pay PGRT and receive no PIP; others will pay no PGRT and receive PIP. These structural effects complicate comparisons between the two systems, but it is possible to assess both the aggregate situation and some typical cases.

Members of the petroleum industry and numerous other analysts have criticized the new regime on the grounds that - contrary to the federal government's stated intentions - the regime has imposed a significantly higher burden on the industry. The PGRT and to a lesser extent the IORT have been criticized as particularly onerous. While it is recognized that the NEP introduced new incentives, in particular Petroleum Incentives Payments, the industry's perception that the new fiscal regime imposes a larger fiscal burden, remains a strongly held belief.

At the same time, there is a recognition that unprecedented levels of interest rates have drained the industry's cash resources, particularly in the case of those companies that have undertaken debt-financed corporate acquisitions. Thus, the industry argues that its current cashflow difficulties stem from the combined impact of higher tax and debt burdens.

The purpose of this note is to examine these propositions and to disentangle the two effects.

Based on an examination of aggregated and disaggregated upstream petroleum industry data, and using the periods 1975-80 and 1981-86 as the basis for comparison of pre-NEP and NEP regimes, the conclusions which emerge do not support the conventional industry view. More specifically, this note concludes that:

- over the period 1981-86, the NEP fiscal regime, in combination with provincial royalties, taxes and incentives, will impose a fiscal burden on the industry which is projected to be <u>no higher</u>, on average, than that borne by the industry in the 1975-80 period.

- since 1979, the industry's interest cost burden has increased significantly and, in part, it is the failure to disentangle the different effects of fiscal and interest burdens which is at the root of misdirected criticism of the NEP regime.

- while the conclusions above are valid for the industry as a whole, it is also the case that some segments of the industry fare better than others under the NEP fiscal regime. Nevertheless, even those companies which benefit least from the incentives provided in the NEP do well in terms of after-tax cashflow relative to the levels of cashflow in the 1975-80 period.

It is recognized that these conclusions appear to differ with the views of many others who have examined the situation on either an individual company basis or in the aggregate. As noted above, the system now in place is significantly different from the one in place prior to the NEP. Almost no company would be left in the same position after as before the establishment of the new system. In general, the larger firms, and the foreign-controlled firms in particular, will bear the larger part of the net burden. Among the Canadian firms, there will be some which pay the new taxes but which - perhaps because of commitments to repay loans taken out to finance acquisitions - are unable to invest in exploration and thereby earn PIPs to offset the taxes.

Moreover, the industry enjoyed record results in 1980, under a combination of favourable circumstances. Many of these circumstances, such as the demand for oil and gas, have changed for the worse from the industry's point of view. Because the NEP fiscal system was the most visible and controversial change taking place during the period, there is a natural tendency to assign to the NEP all of the responsibility for the decline in the industry's position that took place in 1981. There is no disagreement that the fiscal changes introduced by the NEP - PGRT, PIP, the elimination of earned depletion for development expenditures - contributed to part of this decline. In 1981, however, industry profitability was also depressed by a variety of other factors including: unprecedented levels of interest rates; the production cutbacks imposed by the Government of Alberta; and, towards the end of the year, the shut-in of domestic crude production due to declining demand. In addition, the fiscal regime, in 1981, was still in transition. The governments of the producing provinces had not yet made any royalty adjustments in order to accommodate the new federal taxes. It is the contention of this paper that these factors, and not the NEP fiscal regime, account for the bulk of the 1981 decline in industry profitability.

Moreover, while most of the revenue share shift that has taken place has been between governments, the federal government believes that the industry's financial position in 1980 is not a reasonable yardstick for determining the merits of the new system. In that year, there was an unprecedented and unsustainable improvement in revenues and profits for the industry, and an erosion of both the federal and provincial government shares. In the view of both levels of government, there was some scope to reduce the industry's revenues without departing from the objectives of fairness and supply security. Thus, while acknowledging that other analysts may wish to cite 1980 as a point of departure, this paper uses 1979 as a basis of comparison when year-vs-year comparisons are made. Similarly, it uses 1982 rather than 1981 as the NEP representative year: 1981 was characterized by numerous troublesome factors, such as the oil shut-in problem, that distort comparative analyses. Also, there were major changes to the federal and provincial fiscal regimes that will affect 1982 and successive years.

This note is organized into seven sections. Section 2 begins with a review of oil and gas revenue sharing in the 1975-80 period and compares these shares to those forecast for the 1981-86 period. Section 3 examines the evolution of netbacks for the various categories of oil and gas over the period 1975-86. While netbacks reflect payments of royalties and taxes and, therefore, permit some conclusions about the fiscal burden on industry, they do not permit any conclusions about the debt burden since interest charges must be paid out of the 'netback'. Thus, after a detailed comparison of the fiscal burden borne by the industry in 1979 and 1982 (Section 3b), the paper turns in Section 4 to an examination of changes in the industry's interest burden.

In Section 5, the fiscal and tax burdens of the industry are examined at a disaggregated level: foreign companies, Canadian companies, majors, juniors. Within the Canadian segment of the industry, the paper compares interest burdens of companies which have made major takeovers and those which have not. To examine some of the reasons for the differing fiscal effects, Section 6 analyses company revenue shares for quite different, stylized types of companies. Finally, Section 7 contains the conclusions.

2. Level and Sharing of Aggregate Petroleum Revenues

In the period 1975-80, the net operating income (gross revenue minus operating costs) generated by the oil and gas industry increased by over 150% from $5.3 billion to $13.4 billion. Over this period there was no discernible change in the sharing of these revenues among industry and the two levels of government (Table 1): the industry received about 45% of the total, the provincial governments about 45%, and the Government of Canada about 10%.

Table 1

HISTORICAL OIL AND GAS REVENUE SHARING, 1975-1980

	Net Operating Income	Federal		Provincial		Industry	
	($B)	($B)	(%)	($B)	(%)	($B)	(%)
1975	5.3	0.6	(11.3)	1.9	(35.8)	2.8	(52.9)
1976	6.3	0.6	(9.5)	2.6	(41.3)	3.1	(49.2)
1977	8.1	0.9	(11.1)	3.8	(46.9)	3.4	(42.0)
1978	9.2	0.9	(9.8)	4.2	(45.7)	4.1	(44.5)
1979	11.1	1.0	(9.0)	5.6	(50.5)	4.5	(40.5)
1980	13.4	1.1	(8.2)	6.0	(44.7)	6.3	(47.0)
TOTAL	53.4	5.1	(9.6)	24.1	(45.1)	24.2	(45.3)

Source: CPA Statistical Handbook (adjusted for GCOS and Syncrude data) and EMR estimates. Excludes export charges and downstream taxes. Industry's share is after receipt of all incentives and payment of land bonuses.

The new fiscal regime is reflected in the October 1980 document and in the subsequent evolution of the NEP through the federal/provincial agreements reached in the fall of 1981 and the NEP Update of May, 1982. This regime achieved the federal government's revenue sharing objectives and has left the industry's overall share basically unchanged, on average over the period, though slightly lower in the first two years. Based on the pricing assumptions set out in the NEP Update and on the new fiscal regime, the projected levels of oil and gas revenues over the 1981-86 period, and their distribution among industry and governments, are shown in Table 2. These projections may change considerably over time as better assumptions about prices and quantities become available.

Table 2

FUTURE REVENUE SHARES, 1981-86

Projection	Total Revenues to be Shared	Federal		Provinces		Industry	
	($B)	($B)	(%)	($B)	(%)	($B)	(%)
1981	17.0	4.0	23	6.0	36	7.0	42
1982	22.2	6.2	28	6.7	30	9.3	42
1983	26.5	6.3	24	8.2	31	12.0	45
1984	29.1	6.3	22	9.6	33	13.2	45
1985	32.0	6.4	20	10.4	33	15.1	47
1986	35.1	6.3	18	11.6	33	17.2	49
TOTAL	161.9	35.5	22	52.5	32	73.8	46

Source: EMR projection published in NEP Update. Includes export charge revenues and NGGLT, net PCC, COSC. Addition of these downstream taxes tends to understate industry's share compared to 1975-80.

Net revenues available for sharing are expected to more than double over the 1981-86 period. In 1986, these revenues will be about seven times greater than in 1975. The size of the oil and gas "pie" increases dramatically with the significant increases in prices over the period.

The increases in prices which generate this sizeable increase in the revenue base are far in excess of projected increases in production costs and largely reflect, therefore, the windfall gain on Canada's oil and gas resource endowment. It would be appropriate in such circumstances that a greater proportion of these incremental oil and gas revenues accrue to Canadians, in the form of royalty and tax payments to their governments, than historically has been the case.

In fact, this is not expected to happen under the current price forecast. Despite the substantial increase in the absolute level of oil and gas revenues, the industry's share of the total is expected to increase from the 45% figure which it averaged over the 1975-80 period to 46% over the 1981-86 period. This 46% average is composed of shares that start out at 42% and rise to 49% by the end of the period. These industry shares are quite sensitive to future prices. At prices higher than those now projected, governments would take a larger share of the incremental rents. Industry's relative share of the much larger pie would consequently fall, even though absolute revenues would continue to increase. Conversely, industry's relative share would increase if prices rise more slowly than expected.

The average share of the Government of Canada over the 1981-86 period is expected to be about 22% or roughly double that of the 1975-80 period. Over the period as a whole, this improvement in the relative position of the Government of Canada (revenues collected on behalf of all Canadians) results from a more equitable sharing of revenues between the different levels of government. It does not come at the expense of the industry. On the contrary, the industry as a whole can expect to receive a slightly larger share of a much larger revenue base. These data refute the argument of those who suggest that the industry's overall position is worsened by the new fiscal system.

3. Commodity Analysis

a) Netbacks

An alternative means of portraying the industry's position is to examine the historical and projected evolution of netbacks for the various categories of oil and gas in nominal (Table 3) and real (Table 4) terms . These netbacks have been calculated using *effective* rates of income tax and *average* royalty rates (for the Province of Alberta), with the same price scenario as contained in the *NEP Update*.

The clear conclusion to be drawn from these numbers is that forecast netbacks are expected to increase significantly in nominal and real terms for all categories of oil. Netbacks for natural gas, while down from the 1980 peak, have to be viewed against the very substantial increases which occurred in the mid-1970s. By 1986, real netbacks on natural gas are projected to increase above real 1975 levels by more than the equivalent increases in all categories of oil, except NORP oil. With the $250,000 PGRT credit, the forecast increases in netbacks for smaller producers are even more substantial (Appendix Tables A1 and A2). The Appendix also shows the results of the same netback analysis under full marginal tax rates (Tables A3 and A4).

The netback numbers in Tables 3 and 4 do not reflect the receipt of Petroleum Incentives Payments (PIP) or provincial incentives even though PIPs replace tax incentives which, in the pre-NEP period, are reflected in the netback numbers. In this sense, the comparison understates the forecast increases in the period 1982 to 1986.

Conceptually, there can be significant weaknesses in the use of netback analysis as an indicator of the health of the upstream sector of the industry. Simply expressed, netbacks represent the per unit revenues left to the producer after payment of operating costs, royalties and taxes. While netbacks are calculated <u>after-tax</u>, they are calculated <u>before</u> any payments to capital, including interest payments. Thus, in a period when the relative importance of interest charges have been increasing it is essential to look beyond netbacks in assessing the financial health of the industry.

Clearly, in the post 1980 period, the oil and gas industry in Canada, as other industries in Canada and elsewhere, has been faced with unprecedented levels of interest rates which have resulted in a significant drain on the industry's cash resources. At the same time, the industry has been faced with a significantly different fiscal regime which embodies new kinds of taxes but, as well, new kinds of incentives. It is critical to an understanding of the NEP, and of the financial position of the industry, to disentangle the effects of the new fiscal regime from the effects of higher interest rates.

Table 3

NOMINAL NETBACKS UNDER NEP UPDATE
(Current $)

	OIL ($/B)			GAS ($/MCF)	
	OLD	NEW	NORP	OLD	NEW
NEW Historical					
1975	3.06	3.81		.24	.27
1976	3.20	4.13		.37	.45
1977	3.62	4.81		.48	.60
1978	4.49	5.98		.59	.75
1979	4.95	6.51		.73	.93
1980	5.77	7.59		.93	1.21
1981	4.20	7.20		.64	.90
Forecast					
1982	6.57	10.57	17.04	.75	.98
1983	8.72	12.14	17.53	.91	1.15
1984	9.39	12.63	18.67	.98	1.25
1985	10.08	14.02	20.24	1.08	1.39
1986	10.73	15.66	21.74	1.20	1.55

Table 4

REAL* NETBACKS UNDER NEP UPDATE
(1981 $)

	OIL ($/B)			GAS ($/MCF)	
	OLD	NEW	NORP	OLD	NEW
Historical					
1975	5.28	6.51		.41	.47
1976	5.08	6.56		.59	.71
1977	5.32	7.07		.71	.88
1978	6.06	8.08		.80	1.01
1979	6.11	8.03		.90	1.15
1980	6.48	7.60		.90	1.36
1981	4.20	7.20		.64	.90
Forecast					
1982	5.88	9.46	15.25	.67	.88
1983	7.09	9.87	14.25	.74	.94
1984	6.99	9.40	13.89	.73	.93
1985	6.99	9.72	14.03	.75	.97
1986	7.02	10.23	14.21	.78	1.01

* Deflated by the CPI
Source: EMR forecasts in NEP Update.

Conversion Factors:

To convert $/B to $/M^3$, multiply by 6.293
To convert $/Mcf to $/10^3 M^3$, multiply by 35.3

b) The Fiscal Burden

As noted above, the industry is expected to receive, over the 1981-86 period, a larger share of a larger "pie". By definition, therefore, the NEP is not anticipated to increase the aggregate fiscal burden of the industry.

This proposition is examined in a more detailed fashion in Table 5. It compares netbacks after incentives for the various categories of oil and gas for the years 1979 and 1982. By reflecting the receipt of PIP and other incentives, this portrayal allows a more accurate comparison of the impact of the new fiscal regime.

Although there are some conceptual complexities in allocating incentives to individual commodities, the net fiscal burden (defined as taxes less incentives as a share of the wellhead price) is at the same level in 1982 as it was in 1979 for old and new oil. The net fiscal burden is up marginally for natural gas.

In short, the detailed analysis for these two years indicates comparable relative fiscal burdens, while the absolute level of netbacks, after incentives, is higher for every commodity, on either a nominal or constant dollar basis. This is consistent with the aggregate revenue distribution analysis which suggests that, for the full period to 1986, the NEP fiscal regime implies no increase and, in fact, a small decrease in the relative fiscal burden which governments will impose on the industry.

As noted above, this conclusion is not well recognized by the industry. There are perhaps three reasons why this is the case. The first is that while the industry as a whole does not suffer from a higher fiscal burden than in the pre-NEP period, there are distributional effects across the various segments of the industry. Some firms - those with a greater degree of Canadian ownership - are eligible for greater incentives and fare better than other firms. The second is the failure to disentangle the impact of new taxes and incentives from the impact of higher interest rates. The third is that, within the group of Canadian firms, some have taken on much more new debt than others in the course of acquiring other companies. It is important, therefore, to further disaggregate the Canadian segment of the industry according to participation in takeovers.

Table 5

COMPARISON OF 1979 and 1982 NETBACKS AFTER INCENTIVES IN ALBERTA
($ barrel; $/MCF)

	OLD OIL		NEW OIL		NORP**	OLD GAS		NEW GAS	
	1979	1982	1979	1982	1982	1979	1982	1979	1982
Wellhead Price	13.20	24.62	13.20	27.45	44.52	1.88	2.76	1.88	2.76
Less: Op. Costs	1.48	2.80	1.48	2.53	2.37	0.26	0.33	0.26	0.33
Crown Royalty*	5.37	9.28	3.81	8.08	13.74	0.72	1.03	0.52	0.80
IORT	-	0.49	-	0.55	-	-	-	-	-
PGRT	-	2.49	-	2.84	4.81	-	0.28	-	0.28
Sub-Total	6.35	9.56	7.91	13.45	23.60	0.90	1.12	1.10	1.35
Less: Federal CIT	1.17	2.50	1.17	2.39	5.48	0.14	0.32	0.14	0.32
Provincial CIT	0.23	0.50	0.23	0.48	1.10	0.03	0.06	0.03	0.06
Sub-Total	4.95	6.56	6.51	10.58	17.02	0.73	0.74	0.93	0.97
Plus: PIPs (fed. & Alta.)	-	1.69	-	1.93	3.27	-	0.19	-	0.19
Incentives	-	0.94	-	1.53	2.60	-	0.14	-	0.15
Netback	4.95	9.19	6.51	14.04	22.89	0.73	1.07	0.93	1.31
Deflated Netback (1981$)	6.13	8.22	8.06	12.56	20.47	0.90	0.96	1.15	1.17
Net Fiscal Burden									
Level	6.77	12.63	5.21	10.88	19.26	0.89	1.36	0.69	1.12
As % of Wellhead Price	51	51	40	40	43	47	49	37	41

*1979 Crown Royalties are net of Provincial Incentives.
**NORP oil includes Alberta New New Oil only.

Notes:
- PIPs have been allocated on the basis of net operating revenues for each commodity type, divided by its total production.
- Incentives refer to the various credits and rebates that are provided by Alberta. They have been allocated in a manner similar to PIPs. Income tax estimates are at effective rates, after allowing for incentive programs.

The interest rate, distributional and new debt issues are considered below, in turn.

4. Aggregate Interest Burden

It is well recognized that interest charges are taking an increasingly large share of corporate financial resources. Hard data on this phenomenon as it affects the upstream sector of the petroleum industry are difficult to compile. Based on recent Petrolem Monitoring Agency (PMA) information on the share of total industry interest charges which can be allocated to upstream operations, however, Table 6 indicates that interest charges in relative terms have nearly doubled from about $480 million, or 11% of industry's upstream revenues in 1979, to $1.5 billion or 21% in 1981. Preliminary data for the first six months of 1982 suggest a continuation of this relationship.

TABLE 6

AGGREGATE INTEREST BURDEN IN THE PETROLEUM INDUSTRY
($ Millions)

	1979	1980	1981
1. Total Interest Charges for Petroleum Industry	800	1250	2500
2. Proportion of Interest Allocated to Upstream Sector (%)	60	60	60
3. Upstream Petroleum Interest Charges	480	750	1500
4. Net Upstream Industry Revenues (after operating costs, incentives and land)	4200	6300	7000
5. Interest as a Share of Net Upstream Revenues(%)	11.4	11.9	21.4

Notes: - Information on total interest charges is based on Statistics Canada data and PMA estimates of capitalized interest charges.

- 60% upstream interest charge allocation based on PMA information for 1980;

- Net upstream industry revenues from tables 1 and 2 above.

Another aggregate measure of interest burden is the interest coverage ratio (ICR). Table 7 compares these ratios for the petroleum industry and other major industries in Canada between 1980 and the first quarter of 1982. The table indicates that the ICR for the petroleum industry has declined more dramatically than for all other major industries except mining. The decline is continuing in 1982.

Table 7

INTEREST COVERAGE RATIOS FOR NON-FINANCIAL INDUSTRIES IN CANADA

	1980	1981	1981:1	1982:1
TOTAL INDUSTRIES	5.6	3.6	4.2	3.2
TOTAL PETROLEUM	11.0	5.0	7.5	3.2
(i) Mineral Fuels	7.4	3.4	5.1	2.6
(ii) Petroleum and Coal[2]	21.8	11.4	19.1	5.7
MINING	9.4	4.2	5.9	2.1
MANUFACTURING	5.2	3.5	4.3	2.6
OTHER[3]	3.5	2.9	3.2	3.7

1. Interest Coverage Ratio: cashflow before interest expense divided by interest expense.
2. The Petroleum and Coal Products industry is largely comprised of foreign controlled integrated companies.
3. Includes trade, transportation and communications, and commercial services.

Source:

Statistics Canada, Industrial Corporations: Financial Statistics.
Statistics Canada, Preliminary Report on Industrial Corporations in Canada (1982:1).

Thus, for the petroleum industry as a whole, the interest burden has increased substantially while the net federal and provincial fiscal burden has remained approximately constant. These relationships have not been widely recognized and much of the industry's concern about the lack of cashflow available for re-investment has been inappropriately directed at the

NEP fiscal regime rather than at the impact of higher interest rates. In Canada, interest rates continue to bear more or less the same relationship to interest rates in the United States as has historically been the case. As interest rates decrease over time, it will be increasingly clear that the NEP fiscal regime, while intentionally designed to foster increased Canadian ownership, is in aggregate no more onerous than the pre-NEP regime. These conclusions are reinforced by the disaggregated analysis of fiscal and interest burdens which follows.

5. Analysis by Company Group

The conclusions noted above are valid for the industry as a whole. However, because the behavioural characteristics of the company groups within the industry (foreign, Canadian, juniors, majors) differ significantly -- with respect to re-investment, external financing, etc. -- and because PIP incentives vary by degree of Canadian ownership, there are differences among the various groupings of firms with respect to fiscal burdens, interest burdens and other related measures.

This part of the paper presents evidence on the financial performance of the upstream segment of the Canadian petroleum industry over the period 1977-1981. Because most companies do not publish their financial information in sufficient detail to examine the Canadian upstream portion of their operations in isolation, these analyses have been based on PMA data, aggregated to protect the confidentiality of individual company information.

a) Fiscal Burden

As part of the new fiscal regime introduced with the NEP, companies are permitted to offset claims for PIP against PGRT liabilities. While the actual balance of claim versus liability will depend on the circumstances and activity of each company, there tends to be a positive balance for Canadian controlled companies and a negative one for foreign controlled firms. (See PMA, Canadian Petroleum Industry Monitoring Survey 1981, p. 27).

Table 8 sets out the historical per unit after-tax cashflows of a sample of companies in each of the four groups. The cashflow numbers represent production revenue less operating costs less royalties and all taxes -- but before interest charges. It is important to note that the cashflow figures are expressed on a per unit of production basis. This procedure was adopted to remove the effects of fluctuations in levels of production over time.

Table 8

HISTORICAL AFTER-TAX CASHFLOW*
($/oil equivalent barrel)

	1977	1978	1979	1980	1981
FOREIGN MAJORS	4.06	4.61	5.42	7.65	6.49
CANADIAN MAJORS	3.71	5.45	6.89	8.40	9.94
FOREIGN JUNIORS	3.54	4.78	5.73	8.04	7.90
CANADIAN JUNIORS	3.44	4.39	4.85	7.48	8.99
TOTAL	3.96	4.79	5.74	7.84	7.46

*After Tax Cashflow: production revenue less operating costs, royalties and all taxes, plus incentives. Interest charges have not been deducted.

Source: EMR analysis of Petroleum Monitoring Agency data.

For the samples of Canadian majors and juniors, per unit after-tax cashflows increased steadily and significantly over the period 1977-81. This covers the pre-NEP period and the first full calendar year under the NEP. After-tax cashflow was down only slightly for foreign juniors. Even for foreign majors, the 1981 after-tax cashflow number was significantly above the levels achieved in the years 1977 through 1979. The 1981 value is, however, down from the 1980 level for foreign majors. Because of the relative importance of foreign majors to total industry production (they account for 67% of total production revenues for this sample of firms), per unit after-tax cashflows for the overall industry sample were also lower in 1981 than in 1980, but they still marked a substantial increase over 1979.

In short, after-tax cashflows per barrel for all company groups of the industry have increased significantly from the levels of the late 1970s although, in relative terms, Canadian firms have fared better. It also needs to be recognized that 1981 represents a relatively high water mark in terms of industry net fiscal burden because of the significant price increases and royalty reductions that were introduced in 1982.

b) Interest Burden

It is only when one examines the impact on these cashflows of rising debt charges (Table 9) that the financial picture of the industry begins to deteriorate seriously. A comparison of Tables 8 and 9 indicates that Canadian firms, many of which have been involved in debt financed acquisitions (e.g., Dome, Canterra, Sulpetro), have been particularly hard hit by increases in interest charges. Foreign juniors have also been adversely affected but to a more limited extent. Foreign majors appear not to have been significantly affected at all. Thus, whereas Table 8 suggests the fiscal impact of the NEP has been greater on foreign majors than on the rest of the industry, the impact of higher interest costs has been correspondingly more severe on the Canadian segment of the industry.

Table 9

HISTORICAL NET CASHFLOW*

($/oil equivalent barrel)

	1977	1978	1979	1980	1981
FOREIGN MAJORS	3.95	4.44	5.27	7.47	6.29
CANADIAN MAJORS	3.21	4.83	6.02	6.45	6.38
FOREIGN JUNIORS	3.54	4.78	5.42	7.56	7.01
CANADIAN JUNIORS	3.13	3.78	4.09	5.58	2.90
TOTAL	3.76	4.52	5.42	7.18	6.23

* Net Cashflow: production revenue less operating costs, royalties, all taxes and interest expenses, plus incentives. Interest costs on a total corporate basis have been allocated to different segments (i.e., upstream, downstream) of the industry by the companies themselves in their reports to the PMA.

Source: EMR analysis of Petroleum Monitoring Agency data.

The differential impact of higher interest costs is more clearly illustrated in Table 10, which traces the per unit interest burdens of each company group from 1979 through 1981. The most dramatic increase occurred among Canadian juniors, whose per unit interest burdens climbed 214 percent from 1980 to 1981. The increase in interest burden was also high, however, among Canadian majors (82%) and foreign juniors (83%). Much of these increases, particularly in the Canadian segment of the industry, can be directly attributed to takeovers and the burden of new debt.

Table 10

HISTORICAL INTEREST BURDEN, 1979-81

($/oil equivalent barrel)

	1979	1980	1981	1981/80 % Change
Foreign Majors	0.15	0.18	0.21	15
Canadian Majors	0.87	1.95	3.55	82
Foreign Juniors	0.31	0.48	0.88	83
Canadian Juniors	0.60	1.89	5.95	214
Total	0.32	0.67	1.23	84

Source: EMR analysis of Petroleum Monitoring Agency data.

c) Canadian Segment Disaggregation

In 1981, many Canadian companies such as Dome, CDC, Petro-Canada, Husky and Sulpetro were in the market for foreign companies which were either anxious to sell their Canadian assets or whose share values made them particularly attractive takeover candidates. To finance these takeovers, many Canadian companies took on substantial levels of new debt, much of it at floating interest rates, in the expectation that the then-current high rates of interest would soon fall.

In the event, interest rates stayed high and the new levels of debt, combined with the unexpectedly high interest rates and sluggish petroleum market conditions (both prices and volumes), created severe cashflow problems for many aggressive Canadian firms. This distinction between the two groups of Canadian companies -- those which were and were not involved in a major acquisition - is illustrated in Table 11. While the per unit interest burden of both groups went up in 1981, the group which actively sought out acquisitions increased its debt burden between 1980 and 1981 by nearly twice as much as the 'no takeover' group.

Table 11

INTEREST BURDENS OF SELECTED CANADIAN COMPANIES 1979-81
($/oil equivalent barrel)

	1979	1980	1981	1981/80 % Change
Major Takeovers	0.97	2.90	5.85	102
No Takeovers	0.74	0.82	1.28	57
Total	0.85	1.95	3.78	94

Source: EMR analysis of Petroleum Monitoring Agency data.

6. Stylized Comparisons of Fiscal Regimes

One final way in which the industry fiscal burden can be examined is to compare the profitability of companies under the current and previous fiscal regimes. Stylized companies have been developed to simplify the analysis and to highlight the characteristics which make companies better or worse off under the NEP regime.

The different kinds of company characteristics that have been examined in this stylized company analysis are:

1. Ownership
2. Vintage of oil production
3. Size of firm
4. Area of investment activity
5. Debt burden
6. Reinvestment ratio.

Not all possible permutations of these factors were considered, but the main logical groupings have been analyzed under the old and new fiscal regimes.

In comparing across the two fiscal regimes, prices and investment levels were kept constant. This conservative assumption tends to understate the advantage of the NEP regime because the NEP has introduced oil prices which rise substantially faster than those experienced historically (i.e., about $1/bbl every 6 months). Similarly, it can be argued that the PIP program may generate increased investment activity, compared to the former regime -- particularly for Canadian firms, and particularly in the Canada Lands.

The main differences between the old and new fiscal regimes are summarized in Table 12 below.

TABLE 12

COMPARISON OF FISCAL MEASURES

	Pre-NEP	Post-NEP
A. Federal Upstream Taxes		
1. PGRT	- None	- 12% Effective - 11% from June 1 /82 - May 31/83 - $250 K Exemption
2. IORT	- None	- Started 1982 - 1 Year Suspension
B. E&D Incentives		
1. Depletion	- Continued	- Phased out by 1984
2. PIP Grants	- None	- Started 1981 - Up to 80% - PGRT Offset Allowed
C. Provincial Royalties		
1. Alberta	- Pre-1982 Rates	- Reductions on old & new oil and gas - Enriched royalty tax credit
2. Saskatchewan	- Pre-1981 Rates	- Marginal Rates Reduced to 40%

The company shares of net operating revenues over the period 1982-86, under both tax regimes, are compared in Table 13. The major conclusions from this table are:

- shares of net operating revenues are up substantially (under the NEP) for all types of Canadian firms;

- among foreign companies, the larger firms (unable to completely eliminate PGRT liability by means of the small producer exemption) with production from old oil, will experience the largest (about 5 percentage points) reduction in revenue share as a result of the NEP.

TABLE 13

COMPARATIVE COMPANY SHARES OF NET OPERATING REVENUES* UNDER PRE AND POST-NEP REGIMES (1982-86)

	Pre-NEP (%)	Post-NEP
1. Large Foreign - Old Oil - Low Debt - Low Reinvestor	43	38
2. Large Foreign - Old Oil - Low Debt - High Reinvestor	51	46
3. Small Foreign - New Oil - High Debt - High Reinvestor	74	74
4. Large Canadian - Old Oil - Low Debt - High Reinvestor	51	63
5. Large Canadian - Old Oil - High Debt - High Reinvestor	52	67
6. Small Canadian - New Oil - High Debt - High Reinvestor	74	102

* Taking into account the payment of all taxes and royalties and the receipt of all incentives.

The conclusions are consistent with and reinforce the results of the analysis provided in the other sections of this paper.

7. Conclusion

This note has assembled both aggregated and disaggregated data to demonstrate that the tax and incentive regime introduced in the NEP does not result in an increased relative fiscal burden on the industry. Comparisons of fiscal regimes for stylized company types provide the same conclusions for all but the large foreign-owned companies. The industry's criticism on this count is misplaced. The Government of Canada has achieved its objective of a fairer share of oil and gas revenues but this has come about largely as a result of more equitable sharing among governments. The industry's share has not been reduced. In fact, under current price forecasts, the industry's share will improve marginally. The absolute revenues accruing to it are projected to more than double by 1986.

Despite all this, the industry, and particularly Canadian firms, have suffered in recent years from the international movement to unprecedented levels of interest rates. Interest charges are consuming a significantly larger portion of the industry's cashflow and jeopardizing the existence of many companies. Canadian companies which made major acquisitions financed by debt have been particularly hard hit by high interest rates, and it is important to distinguish them from other Canadian firms which have been more financially cautious about taking on major new debt burdens.

The origins of these interest rate difficulties lie outside of Canada. High interest rates are an international phenomenon and Canadian interest rates are not out of line with historical relationships internationally. Nevertheless, the serious financial position of the industry has been recognized by the Government of Canada and the provincial governments. With this in mind, both Alberta and Saskatchewan have moved to reduce royalties. For its part, the Government of Canada in the NEP Update of May 1982 announced a package of measures worth over $2 billion -- the purpose of which was to improve the short term cash position of all firms in the industry and to address in particular the unsatisfactory financial position of the smaller Canadian producers.

APPENDIX

Contents

Table A-1

NOMINAL NETBACKS* TO SMALL PRODUCERS

(Current $)

	OIL($/B)			GAS ($/MCF)	
	OLD	NEW	NORP	OLD	NEW
Historical					
1975	3.06	3.81		0.24	0.27
1976	3.20	4.13		0.37	0.45
1977	3.62	4.81		0.48	0.60
1978	4.49	5.98		0.59	0.75
1979	4.95	6.51		0.73	0.93
1980	5.77	7.59		0.93	1.21
1981	4.20	7.20		0.64	0.90
Forecast					
1982	7.75	11.91	19.32	0.87	1.11
1983	11.93	15.56	22.48	1.24	1.48
1984	13.18	16.51	24.26	1.35	1.62
1985	14.16	18.24	26.33	1.51	1.82
1986	15.06	20.19	28.33	1.67	2.02

*At effective tax rates

Source: EMR forecasts under NEP Update assumptions.

Table A-2

REAL NETBACKS* TO SMALL PRODUCERS
(1981 $)

	OIL($/B)			GAS ($/MCF)	
	OLD	NEW	NORP	OLD	NEW
Historical					
1975	5.28	6.51		0.41	0.47
1976	5.08	6.56		0.59	0.71
1977	5.32	7.07		0.71	0.88
1978	6.06	8.08		0.80	1.01
1979	6.11	8.03		0.80	1.15
1980	6.48	7.60		1.04	1.36
1981	4.20	7.20		0.64	0.90
Forecast					
1982	6.94	10.66	17.29	0.78	0.99
1983	9.70	12.65	18.28	1.01	1.20
1984	9.81	12.29	18.05	1.01	1.21
1985	9.81	12.64	18.25	1.04	1.26
1986	9.84	13.20	18.52	1.09	1.32

*At effective tax rates.

Source: EMR forecasts under NEP Update assumptions.

Table A-3

NOMINAL NETBACKS* AT FULL TAX RATES
(Current $)

	OIL($/B)			GAS ($/MCF)	
	OLD	NEW	NORP	OLD	NEW
Historical					
1975	1.67	2.34		0.15	0.17
1976	1.67	2.50		0.21	0.28
1977	1.90	2.96		0.26	0.37
1978	2.16	3.48		0.30	0.44
1979	2.49	3.88		0.36	0.54
1980	2.91	4.53		0.47	0.72
1981	1.42	3.66		0.28	0.51
Forecast					
1982	2.82	5.40	9.11	0.31	0.52
1983	3.97	6.33	9.10	0.39	0.60
1984	4.35	6.80	9.64	0.41	0.72
1985	4.53	7.43	10.41	0.44	0.72
1986	4.58	8.08	11.11	0.48	0.79

*Large producers.

Source: EMR forecasts under NEP Update assumptions.

Table A-4

REAL NETBACKS* AT FULL TAX RATES

(1981 $)

	OIL($/B)			GAS ($/MCF)	
	OLD	NEW	NORP	OLD	NEW
Historical					
1975	2.88	4.03		0.26	0.29
1976	2.65	3.97		0.33	0.44
1977	2.79	4.35		0.38	0.55
1978	2.91	4.70		0.41	0.60
1979	3.07	4.79		0.45	0.67
1980	3.27	5.09		0.53	0.81
1981	1.42	3.66		0.28	0.51
Forecast					
1982	2.53	4.84	8.15	0.28	0.47
1983	3.22	5.15	7.40	0.31	0.49
1984	3.24	5.06	7.17	0.30	0.48
1985	3.14	5.15	7.22	0.30	0.50
1986	2.99	5.28	7.26	0.31	0.52

*Large producers.

Source: EMR forecasts under NEP Update assumptions.

GLOSSARY OF TERMS

Cashflow : Cash remaining to industry or company from upstream petroleum production revenues after deducting some or all of:

- operating costs
- royalties
- taxes
- interest

and after adding back incentives.

After-tax cashflow deducts all of the above items, except interest.

Net cashflow deducts all of the above items, including interest

Downstream : A descriptive term for the refining and marketing sector of the petroleum industry.

Fiscal Burden : The sum of all government taxes and royalties, net of incentive payments and expressed as either an absolute level or as a fraction of industry net operating revenues.

IORT : Incremental Oil Revenue Tax, introduced in January 1982 and suspended on June 1, 1982.

Junior Companies	: This group consists of those reporting companies which are predominantly exploration or production-oriented. The junior companies each generate less than 1% of total industry upstream revenues.
Major Companies	: Each of these companies have more than one percent of industry upstream revenues.
Net Operating Income	: Gross upstream revenues net of operating costs and including, after 1980, the following downstream taxes: NGGLT, net PCC, crude oil export charge, and Canadian Ownership Special Charge.
Netbacks	: Return to a producer on a unit of oil or gas production after deducting: - operating costs - royalties - taxes the deduction of taxes may be calculated at either full marginal rates of income tax or at effective income tax rates which account for the fact that, on average, many firms pay for less than full marginal rates.
'New' Oil/Gas	: Oil or gas producted from a reservoir discovered after 1973 and usually subject to a lower provincial royalty than 'old' oil/gas.
NORP	: New Oil Reference Price, introduced effective January 1, 1982.

NORP Oil	: Oil which is eligible to receive the NORP, including post-1980 discoveries of conventional oil, tertiary recovery projects, synthetic oil and some other high cost sources.
'Old' Oil/Gas	: Oil or gas produced from a reservoir discovered prior to 1974 and usually subject to a higher provincial royalty than 'new' oil/gas.
PGRT	: Petroleum and Gas Revenue Tax.
PIP	: Petroleum Incentives Payments, established by the NEP and paying grants for petroleum exploration and development expenditures.
'Small' Producer	: A producer of oil or gas with production income low enough to qualify for the full $250,000 PGRT exemption announced in May, 1982.
Upstream	: A term used to describe the <u>production</u> sector of the oil and gas industry as opposed to the refining and marketing sector.